university of groningen

University Medical Center Groningen

University of Groningen

Hand eczema

Oosterhaven, Jart

DOI:
10.33612/diss.98242014

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2019

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):
Oosterhaven, J. (2019). *Hand eczema: impact, treatment and outcome measures*. [Thesis fully internal (DIV), University of Groningen]. https://doi.org/10.33612/diss.98242014

Copyright
Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the “Taverne” license. More information can be found on the University of Groningen website: https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment.

Take-down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): http://www.rug.nl/research/portal. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Download date: 06-05-2023

Chapter 6

Dupilumab treatment of very severe refractory atopic hand eczema

JAF Oosterhaven, GLE Romeijn, MLA Schuttelaar

JAMA Dermatol. 2018 Aug 1;154(8):969-970.

Dupilumab is a human monoclonal antibody registered for the treatment of atopic dermatitis. We describe a patient with very severe and refractory atopic hand eczema who was treated with dupilumab.

REPORT OF A CASE

A woman in her 50s had been treated for 18 years for a combination of very severe chronic atopic hand eczema and moderate to severe atopic dermatitis. The hand eczema was her main complaint. Onset of disease was during early childhood. She had asthma, rhinitis, and a positive family history for atopy. Irritant contact dermatitis was ruled out because she limited contact with irritants to an absolute minimum. Multiple epicutaneous allergy tests over the years showed positive patch test reactions to nickel, cobalt, sesquiterpene lactone mix, colophonium, methyl(chloro)isothiazolinone, methyldibromo glutaronitrile, parthenolide, and oleamidopropyl dimethylamine. Efforts to eliminate contact with these allergens did not lead to improvement of the eczema. Treatment with emollients, potent topical corticosteroids and local bath psoralen UV-A were ineffective. Subsequently, she was treated with a multitude of systemic drugs (see Table 1). During and between these courses, she had to use oral corticosteroid therapy intermittently. Initially, this improved her hand eczema, but the effect decreased. During her last course of cyclosporine, she had been concomitantly taking prednisolone, 20mg/day, for 9 consecutive months with inadequate response.

Dupilumab treatment was initiated with a loading dose of 600mg subcutaneously, followed by 300mg once every 2 weeks. Concomitant systemic medication consisted of prednisolone, 7.5mg daily; omeprazole, 20mg daily; and calcium carbonate/cholecalciferol 1.25g/400IU tablets twice daily. At the start of dupilumab treatment, our patient had a 'very severe' hand eczema according to the validated photographic guide by Coenraads *et al*.[1] Her Hand Eczema Severity Index (HECSI) score was 244 of 360.[2] After 4 weeks of treatment, the hand eczema was improved to 'severe', with a HECSI score of 115 of 360. The daily prednisolone dose was slowly tapered by 2.5mg each 4 weeks and stopped after 12 weeks of treatment with dupilumab. At week 16, severity was measured at 'almost clear', with a HECSI score of 11 of 360.

DISCUSSION

This case highlights the effectiveness of dupilumab in a patient with hand eczema that was extremely refractory to therapy. For this patient, all treatment options were exhausted when dupilumab was started. We believe that the beneficial effect of the concomitantly given prednisolone was very small, mainly because in the 9 months before dupilumab treatment was begun, prednisolone was ineffective in higher doses. In addition, the prednisolone dose was low at the start of dupilumab treatment and tapered.

Because dupilumab is directed against the shared alpha subunit interleukin (IL)-4 receptor and blocks signaling from IL-4 and IL-13, it has a different mechanism of action than the various ineffective immunosuppressive/immunomodulatory drugs that our patient received previously. These drugs target the retinoid receptor (alitretinoin), the calcineurin pathway (cyclosporine and tacrolimus), the purine synthesis pathway (azathioprine and mycophenolic acid), and the folic acid pathway (methotrexate). Although the pathogenesis of hand eczema has not been elucidated, the effectiveness of dupilumab in this case, corresponding to the effectiveness of the drug in many cases of moderate to severe atopic dermatitis,[3,4] suggests that similar pathways underlie atopic dermatitis and atopic hand eczema (hand eczema in individuals with atopic dermatitis). The striking improvement seen in this case raises the question whether dupilumab will also be effective in other forms of severe hand eczema.

We suggest that dupilumab, now that it has become widely available for the treatment of atopic dermatitis, could be considered as off-label treatment in cases of severe, highly treatment-refractory hand eczema.

Table 1 Courses of systemic medication

Course No.	Medication	Dose	Total duration (weeks)	Stopping reason
1	Alitretinoin	Variable: 30mg, 10mg, 20mg/day	24	Headache, ineffectiveness
2	Cyclosporine	5mg/kg/day, tapered to 3.1mg/kg/day	7	Abdominal discomfort, nausea, myalgia
3	Azathioprine	2.5mg/kg/day	4	Abdominal discomfort, nausea, collapse with urofecal incontinence
4	Cyclosporine	3.3mg/kg/day	1	Abdominal discomfort, nausea, vomiting
5	Mycophenolic acid	Start: 720mg/day (two 360mg doses) Later: 1440mg/day (two 720mg doses)	9	Ineffectiveness
6	Tacrolimus (oral)	0.1 mg/kg/day	10	Headache, nausea, ineffectiveness
7	Methotrexate (subcutaneously)	Start: 10mg/week Later: 20mg/week	18	Ineffectiveness, headache
8	Cyclosporine	Start low dose 25mg/day, titrated up to 1.8mg/kg/day	32	Headache, nausea, ineffectiveness

Mean weight of the patient during these courses was 58 kg. During and between these courses, oral corticosteroid therapy was used intermittently.

REFERENCES

1. Coenraads PJ, Van Der Walle H, Thestrup-Pedersen K, et al. Construction and validation of a photographic guide for assessing severity of chronic hand dermatitis. *Br J Dermatol*. 2005;152(2):296-301. doi:BJD6270 [pii].

2. Held E, Skoet R, Johansen JD, Agner T. The hand eczema severity index (HECSI): a scoring system for clinical assessment of hand eczema. A study of inter- and intraobserver reliability. *Br J Dermatol*. 2005;152(2):302-307. doi:BJD6305 [pii].

3. Beck LA, Thaçi D, Hamilton JD, et al. Dupilumab Treatment in Adults with Moderate-to-Severe Atopic Dermatitis. *N Engl J Med*. 2014;371(2):130-139. doi:10.1056/NEJMoa1314768.

4. Blauvelt A, de Bruin-Weller M, Gooderham M, et al. Long-term management of moderate-to-severe atopic dermatitis with dupilumab and concomitant topical corticosteroids (LIBERTY AD CHRONOS): a 1-year, randomised, double-blinded, placebo-controlled, phase 3 trial. *Lancet*. 2017;389(10086):2287-2303. doi:10.1016/S0140-6736(17)31191-1.